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No. X.

A Drawing and Description of the Clupea Tyrannus and Oniscus Praegustator. By BENJAMIN HENRY LATROBE. F. A. P. S.

The committee to whom was referred Mr. Latrobe's paper on a species of oniscus, called by the author oniscus praegustator, reports, that the same is worthy of publication.

BENJAMIN SMITH BARTON.

February 17th, 1800.

Feb. 21, 1800.

Philadelphia, December 18th, 1799.

To Thomas P. Smith, one of the Secretaries of the American Philosophical Society.

SIR,

Read Feb. 7, 1800. I BEG leave, through your means, to communicate to the American Philosophical Society, an account of an insect, whose mode of habitation, at least during some part of his life, has appeared to me one of the most singular, not to say whimsical, that can be conceived.

In the month of March 1797, illness confined me for several days, at the house of a friend on York river in Virginia, during his absence. My inability to move further than to the shore of the river, gave me leisure to examine carefully, and in more than an hundred instances, the fact I am going to mention.

Among the fish that at this early season of the year resort to the waters of York river, the alewife or oldwife, called

called the *bay-alewife* (*clupea nondescripta*) arrives in very considerable shoals, and in some seasons their number is almost incredible. They are fully of the size of a large herring, and are principally distinguished from the herring, by a *bay* or red spot above the gill-fin. (see the drawing) They are, when caught from March to May, full-roed and fat, and are at least as good a fish for the table as the herring.

In this season, each of these alewives carries in her mouth an insect, about two inches long, hanging with its back downwards, and firmly holding itself by its 14 legs to the palate. The fishermen call this insect *the louse*. It is with difficulty that it can be separated, and perhaps never without injury to the jaws of the fish. The fishermen therefore consider the insect as essential to the life of the fish ; for when it is taken out, and the fish is thrown again into the water, he is incapable of swimming, and soon dies. I endeavoured in numerous instances to preserve both the insect and the fish from injury, but was always obliged either to destroy the one, or to injure the other. I have sometimes succeeded in taking out the insect in a brisk and lively state. As soon as he was set free from my grasp, he immediately scrambled nimbly back into the mouth of the fish, and resumed his position. In every instance he was disgustingly corpulent, and unpleasant to handle ; and it seemed, that whether he have obtained his post, by force, or by favor, whether he be a mere traveller, or a constant resident, or what else may be his business where he is found ; he certainly has a *fat* place of it, and fares sumptuously every day.

The drawings annexed to this account were made from the live insect, and from the fish out of whose mouth he was taken. I had no books to refer to, then ; but examining the *Systema Naturæ* of Linnæus, I was surprized to find so exact a description of the insect as follows

follows (see Salvii editio, Holmiæ 1763. p. 1060. also Trattner's Vienna edition, same page).

“ *Insect. apt.* ONISCUS, PEDES XIV.

Antennæ setaceæ

Corpus ovale.

O. Physodes, abdomine subtus nudo, caudâ ovatâ.

Habitat in pelago ; corpus præter caput, et caudam ultimam, ex septem segmentis trunci, et quinque caudæ. Antennæ utrinque duo, breves. Caudæ folium terminale omnino ovatum ; ad latera utrinque subtus auctum duobus petiolis diphyllis, foliolis lanceolatis, obtusis, caudâ brevioribus. Caudæ articuli subtus obtecti numerosis vesiculis longitudine caudæ.”

From the particularity with which the oniscus physodes is described by Linnæus, it is evident that he had the insect before him, or a description by an attentive observer. It appears also from the “ *Habitat in pelago*,” that the O. physodes, if this be the insect, is found detached from his conductor. There are a few points in which the O. physodes differs from my insect. I did not observe the antennæ, perhaps for want of sufficient attention, or of a microscope. The petioli of the tail were not, to appearance, *two-leaved*, and I am certain that the segments of the tail, and the tail itself, were without the *vesiculi longitudine caudæ*.

There are many circumstances, to ascertain which is essential to the natural history of this insect. The fish whose mouth he inhabits comes, about the same time with the chad, into the rivers of Virginia from the ocean, and continues to travel upwards from the beginning of March, to the middle of May; as long as they are caught upon their passage up the river, they are found fat and full of roe. Every fish which I saw had the oniscus in his mouth; and I was assured, not only by the more ignorant fishermen, but by a very intelligent man who came

came down now and then to divert himself with fishing, that, in 40 years observation, he had never seen a bay alewife without the louse. The chad begin to return from the fresh water lean and *shorten*, about the end of May and beginning of June, and continue descending during the remaining summer months. No one attempts then to catch them, for they are unfit for the table. Whether the bay alewife returns with the chad, I could not learn, but it is certain that after June it is not thought worth the trouble to catch them. No one could tell me *positively* whether the oniscus still continues with them, but it was the opinion of my informant, that, like every other parasite, he deserts his protector in his reduced state, for he could not *recollect* that he had ever seen him in the mouth of those accidentally caught in the seine in July or August.

I consider, therefore, the natural history of the oniscus, which I now communicate, as very imperfect; and it were to be wished that some lover of natural science would follow up the enquiry, by endeavoring to ascertain whether he continue with, or quit the fish before his return to the ocean, and also whether he be the oniscus physodes of Linnaeus, *qui habitat in pelago*.

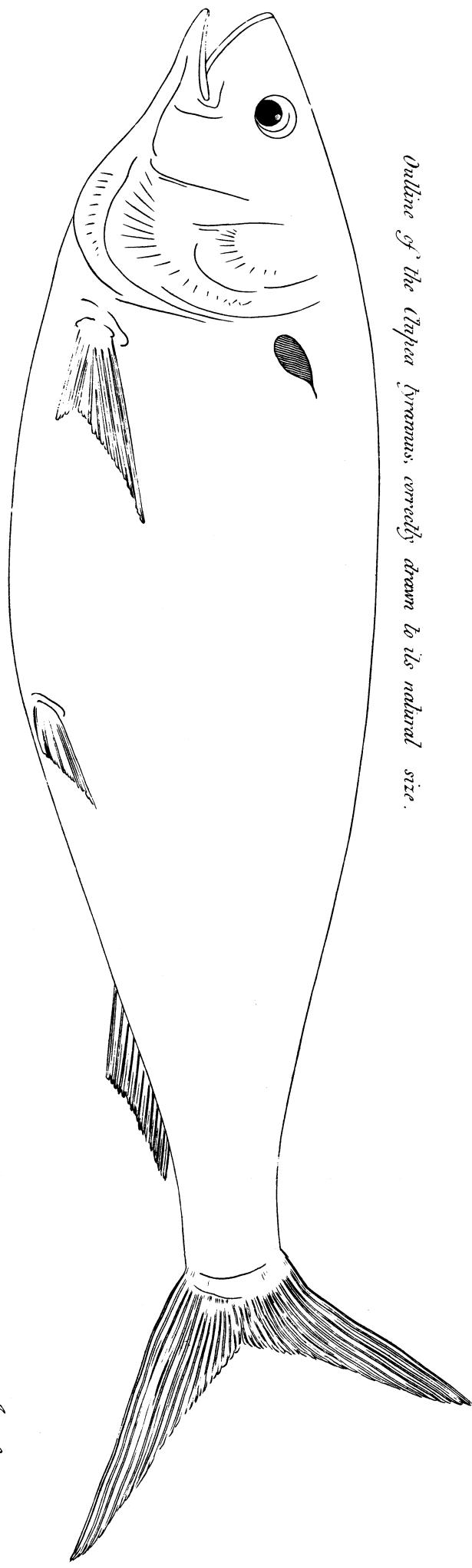
Should he be an insect hitherto undescribed, I think he might be very aptly named *oniscus prægustator*.

The bay alewife is not accurately described in any ichthyological work which I have seen; nor can I from my drawings, which were made with a very weak hand, venture a description. From his having a regular prægustator, I would suggest that he ought to be named *clupea tyrannus*.

The oniscus resembles the minion of a tyrant in other respects, for he is not without those who *suck* him. Many of those which I caught had two or three leaches on their bodies, adhering so closely, that their removal cost them

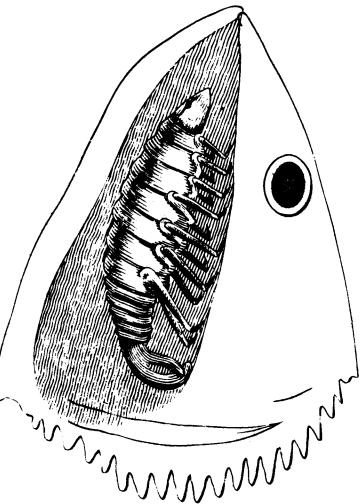
The *Oniscus panenstator*, drawn to its natural size, by measurement.

Plate 1.

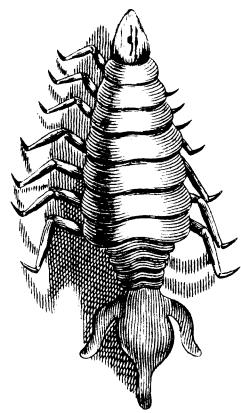


Outline of the *Cichla tyranus*, correctly drawn to its natural size.

The insect, as it places itself in the mouth of the *Cichla tyranus*.



Leech, found upon the Insect.



them their heads. Most of the marine onisci appear to be troublesome to some one or other fish. The oniscus ceti is well known as the plague of whales, and many of the rest are mentioned in Linnæus and Gmelin, as *pestes piscium*.

BENJ^N. HENRY LATROBE, F. A. P. S.

P. S. A gentleman well skilled in entomology informs me that he believes, that in Block's History of Fishes, a work not to be had in Philadelphia, this oniscus is mentioned. But, from a late examination of Gmelin and Fabricius, I am convinced that the oniscus *prægustator* is a species not hitherto accurately described—Gmelin had probably seen the Linnæan insect, having changed the antennæ utrinque duo, to antennis quaternis, and left out most of the long description given by Linnæus. Neither he, Linnæus nor Fabricius mention the circumstance of habitation in the mouth of the fish, and the industrious and copious Fabricius, who having changed the names of the genera, calls him *cymothoa phyfodes*, copies the description of Gmelin, excepting the mention of the 4 antennæ, which in his arrangement form a character of the genus.